Fusion3

ANVIL Print Head

ABOUT THE ANVIL PRINT HEAD

Revision 6/30/2025

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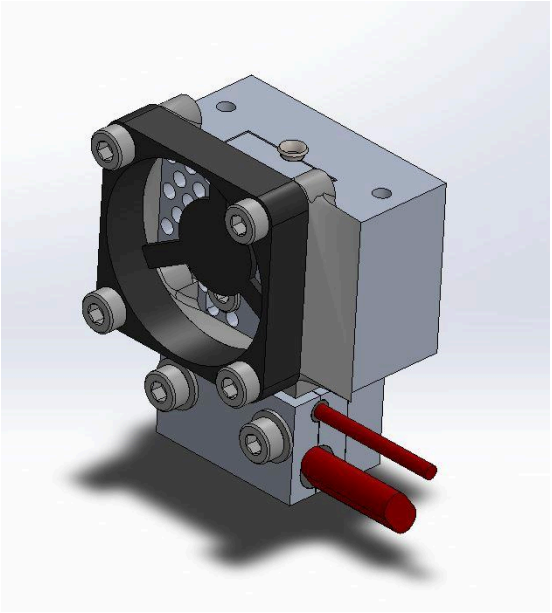
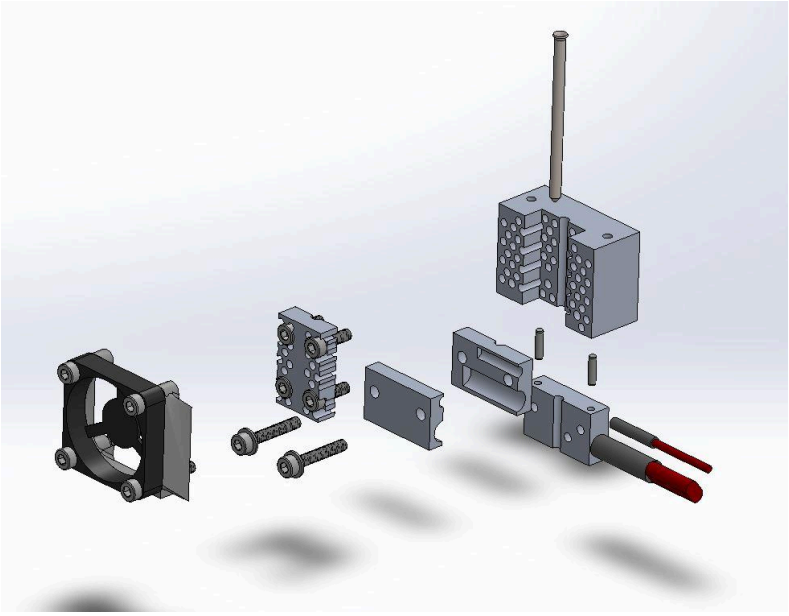
Information on ANVIL print head and how to maintain it properly for peak performance

INTRODUCTION TO ANVIL PRINT HEAD

EDGE and F200 use a brand-new print head developed in-house specifically for Fusion3's products, called ANVIL. This new print head combines the excellent thermal and printing performance of other commercially-available systems with lower operating costs, easier maintenance, and higher reliability. And it's compatible with fiber-filled and other abrasive filaments right out of the box.





PRINT HEADS & CONSUMABLES

The tube of the print head is considered a consumable part and is not covered under the standard warranty. Tubes should be replaced as-needed for jams, print quality issues, etc. Tubes can be easily replaced by the end user.

The heater cartridge and temperature sensor are considered consumable parts and are not covered under the standard warranty. These should be replaced as-needed. These can be easily replaced by the end user.

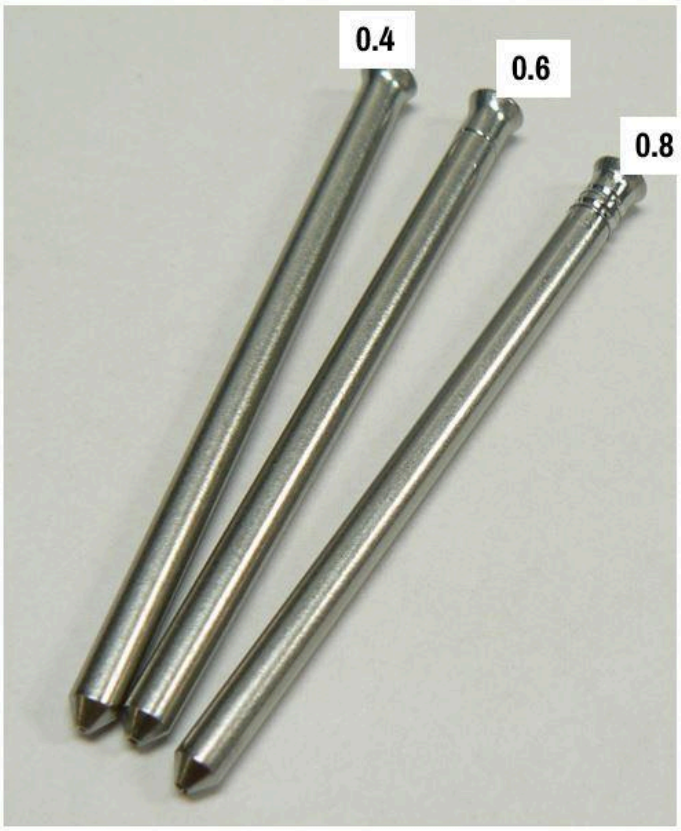
The rest of the print head is considered a warranty item.

DIFFERENT NOZZLE/TUBE SIZES

Fusion3 offers 0.4, 0.6, and 0.8mm tubes for ANVIL. A 0.2mm nozzle is in development.

The nozzle size is indicated by a number of grooves machined into the outside of the tube at the top.

- 0 rings = 0.4mm
- 1 ring = 0.6mm
- 2 rings = 0.8mm
- 3 rings = 0.2mm (coming soon)



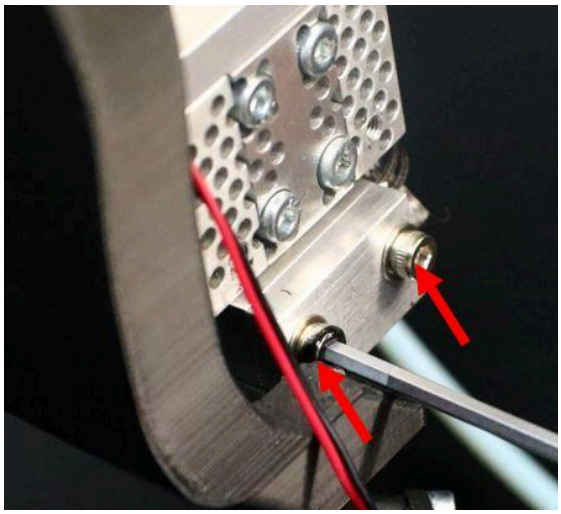
REPLACING A PRINT TUBE

Please see the standalone instructions:

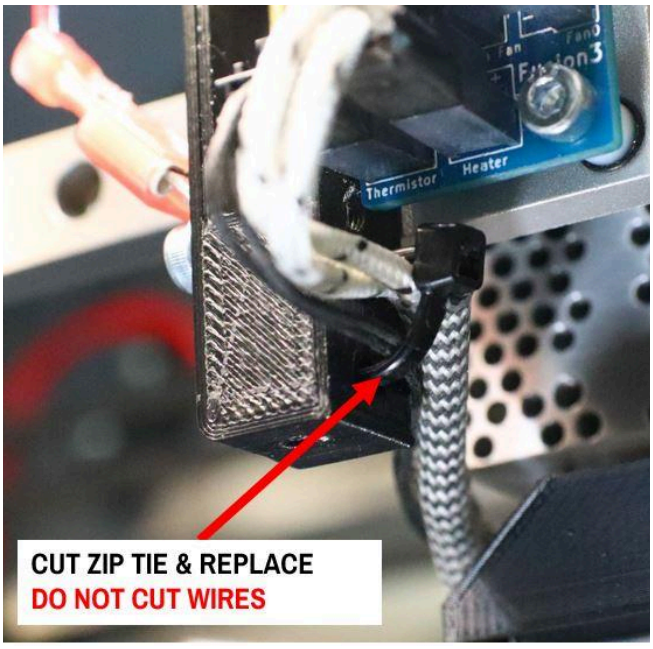
- Replacing the ANVIL tube on EDGE
- Replacing the ANVIL tube on F200 (coming soon)

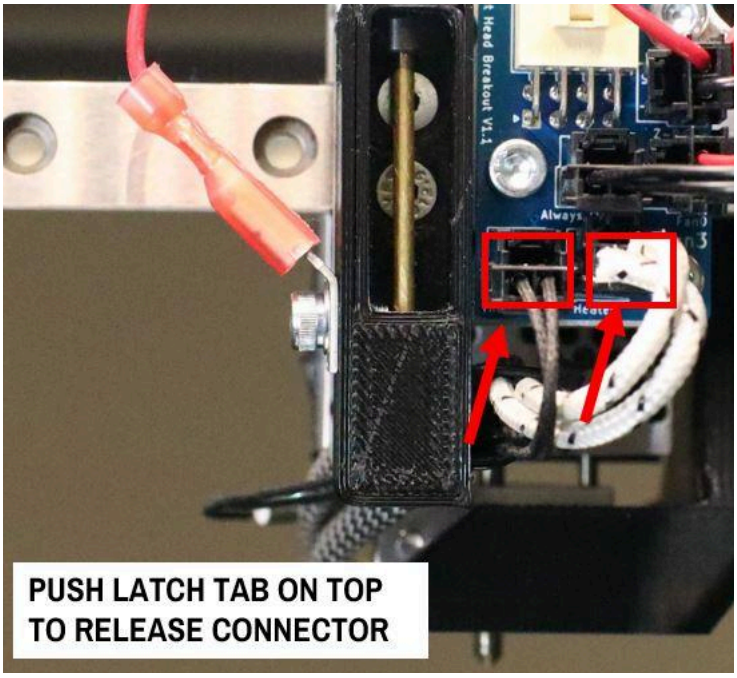
(EDGE) REPLACING THE HEATER OR TEMPERATURE SENSOR

1. Loosen the (2) hot side clamp screws

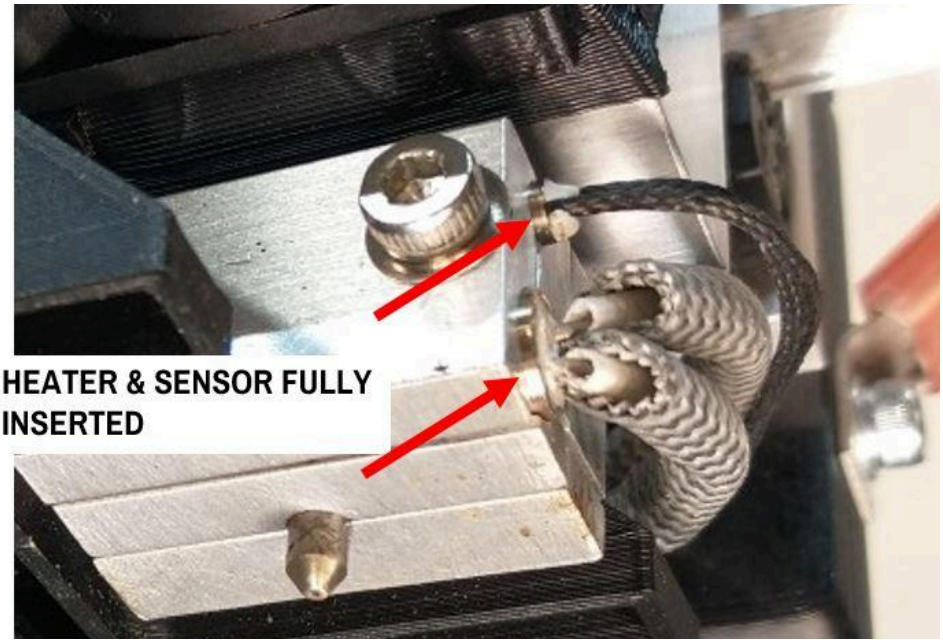


2. Slide the component that needs to be replaced out of the hot block assembly. Disconnect the connector from the print head breakout PCB and trim the zip tie in the bed probe body to free the component.



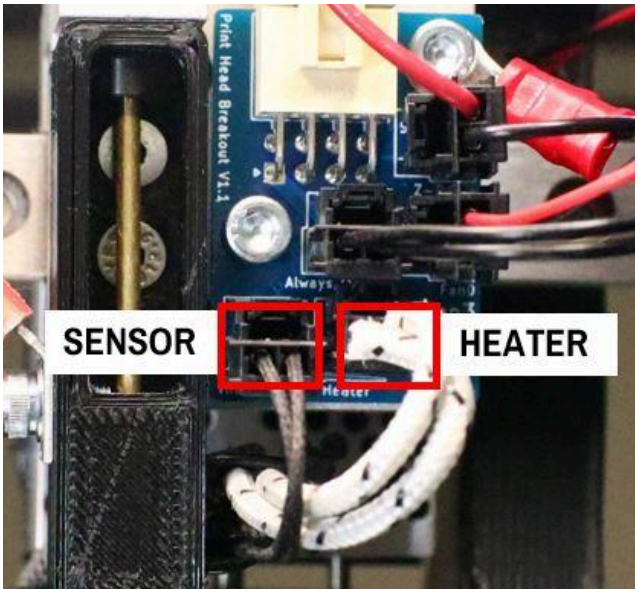


3. Slide the new component in. Make sure it's fully seated before you tighten the screws

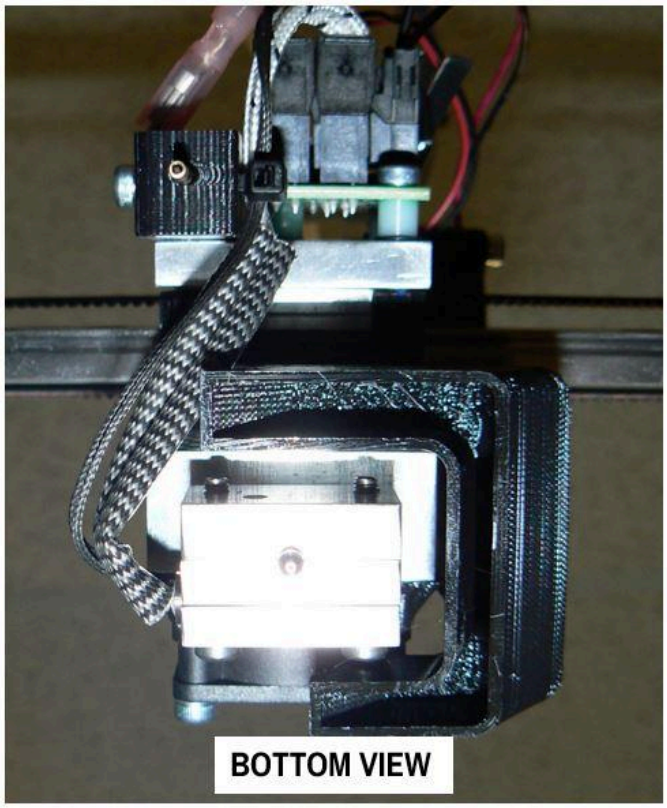


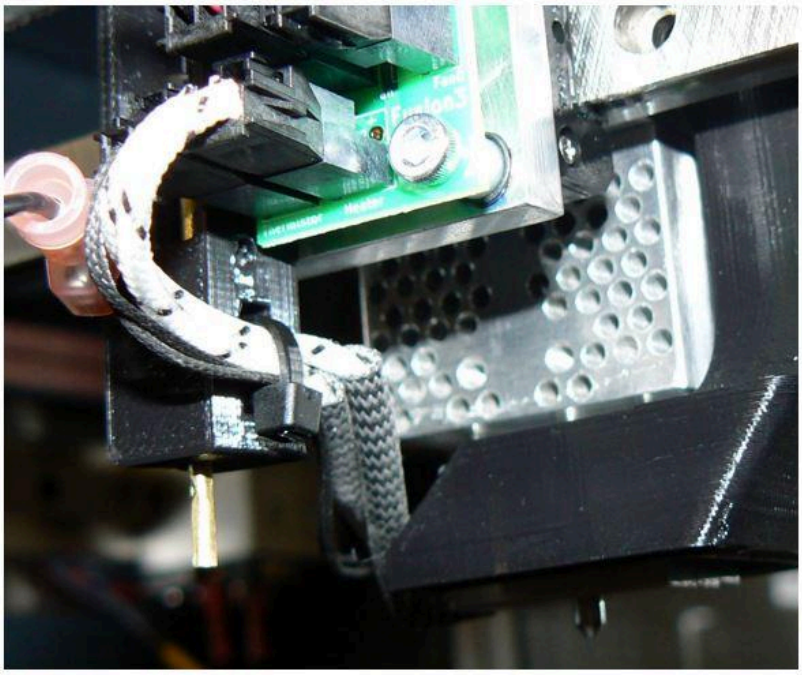
4. Route the wire back to the breakout board and connect it.

IMPORTANT: If you have removed both components, be VERY careful not to plug them into the wrong spots. Connecting the sensor to the heater input will destroy it immediately. See picture below to make sure you connect them correctly.



5. Replace the zip tie in the bed probe body and retain the sensor and heater wires in the zip tie. Route the wires as shown.





(F200) REPLACING THE HEATER OR TEMPERATURE SENSOR

1. Unload filament, if filament is loaded.
2. Remove the Toolhead Front Housing. Steps on pages 2 & 3 of Toolhead Access module HERE.
3. Remove the Toolhead Toolboard Cover. Steps on pages 6 & 7 of Toolhead Access module HERE.
4. Disengage the print head from its rear alignment notch and lower it so that the hot side screws are accessible.
5. Loosen the 2 hot side screws and slide the heater and sensor out of the block. Set the print head to the side.
6. On the Toolboard PCB, disconnect the damaged item (heater or sensor). Remove the component from the toolhead. See wiring diagram HERE.
7. Connect the replacement component to the toolboard and route the wire alongside the other component.
8. Install the heater and sensor back into the print head hot side. Tighten the hot side screws.
9. Reinstall the print head onto the toolhead.
10. If the printer is off, power on and verify the sensor reports correctly and the print head heats up.
11. Reinstall the Toolboard Cover. Make sure the wires don't get pinched and are routed correctly. Steps on page 8 of Toolhead Access module HERE.
12. Reinstall the Toolhead Front Cover.